

Application No. 09/830,778
Amendment dated April 9, 2004
Page 9

REMARKS/ARGUMENTS

Preliminarily, the Applicants thank the Examiner for acknowledging the allowability of claims 10, 16 and 17, and submit that the remaining claims are allowable as well. Reconsideration and allowance of the present application based on the following remarks are respectfully requested.

Claim 19 has been amended to recite additional elements that may comprise the igniting device, as were present in previously pending claim 19. It is further believed that the amendments to the specification place the drawings in full compliance with 37 C.F.R. 1.83(a), and would be fully understood by one of skill in the art.

The specification has been objected to based on the data presented in Table 1 on page 25. The Applicants note that the data in Table 1 represents experiments conducted in two different brass cups; one with a volume of 0.24 cc, and the other having a volume of 0.14 cc. Accordingly, the Applicants respectfully request the withdrawal of this rejection.

Claim 34 stands rejected under 35 U.S.C. §102(b) as anticipated by Usel (US 4,213,392). The Applicants respectfully traverse this rejection for at least the following reasons.

The composition of claim 34 comprises two components, each of which is particulate in nature. One component is a porous, powdered explosive which refers to an explosive material, which when loosely poured into a container, allows air to pass through the material without a substantial amount of resistance. The other component, the high burn rate pressurizing initiator, is also required to be particulate, to provide a rapid increase in pressure so as to provide a shock wave suitable for initiation for the porous, powdered explosive. Furthermore, particles of the high burn-rate pressuring initiator are located within interstitial spaces provided between the particles of the powdered explosive.

In contrast, Usel describes a cartridge-less bullet comprising a projectile, an ignition/explosive charge which propels the projectile when ignited and an electrode-less ignition/firing cap.¹ Usel prepares the ignition charge from a pre-formed nitrocellulose body by using a pore-forming material, which is then removed. This results in the formation of pores in the nitrocellulose body at locations where the pore-forming material has been removed. A water-soluble accelerating material is then introduced into the pores by

¹ See column 1 lines 11-14 and column 2 lines 57-61.

Application No 09/830,778
Amendment dated April 9, 2004
Page 10

impregnating the nitrocellulose body with a solution of the accelerating material, removing the impregnated body from the solution and cooling it to room temperature.

Accordingly, there is no disclosure in Usel of an intimate mixture of a relatively large particle size porous powdered explosive having interstitial spaces and a relatively small particle size high burn-rate pressurizing initiator located within said interstitial spaces. Usel does not describe using particulate components to form the ignition charge.

Although there is no detail in Usel as to how the nitrocellulose body is actually prepared, one of ordinary skill in the art would appreciate that it is not particulate in nature. In addition, the ignition charge is required to have mechanical strength and resist water absorption,² further suggesting that the nitrocellulose body referred to in Usel is non-particulate in character. The use of particulate accelerating material is neither taught or suggested in Usel.

There is no disclosure that the ignition charge is particulate in nature such that the resultant charge includes relatively large particle size porous, powdered explosive having interstitial spaces and relatively small particle size, high burn rate pressurising initiator located within the interstitial spaces. The ignition charge of Usel is certainly not an intimate mixture of particulate components which are sized relative to each other so that one component is provided within interstitial spaces formed by packing of the other component. There is no teaching or suggestion, that the nitrocellulose body becomes porous in the sense required of the powdered explosive called for in claim 34 of the present application.

Claims 1-9, 11-15, 18, 19, 21-25, and 29-33 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Lindqvist *et al.* (US 5,385,098) in view of Usel. The Applicants respectfully traverse this rejection for at least the following reasons.

The Examiner has acknowledged that Lindqvist *et al.* does not disclose an initiation portion comprised of an intimate mixture of relatively large particle size, porous, powdered explosive and a relatively small particle size, high burn-rate pressurizing initiator located within the interstitial spaces of the relatively large particle size, porous, powdered explosive. However, the Examiner goes on to say that it would have been obvious to one of ordinary skill in the art at the time the invention was made to employ the method taught by Usel in order to obtain the kind of initiation portion required in claim 1 of the present application.

² See column 4 lines 50-53 of Usel

Application No. 09/830,778
Amendment dated April 9, 2004
Page 11

This rejection fails for the same reasons as above, and therefore fails to render the claimed invention obvious. Specifically, since the initiation portion of claim 1 includes the same features as claim 34 with respect to the particulate intimate mixture, it follows that the initiation portion of claim 1 is also fundamentally different from the ignition charge taught in Usel. Thus, even if, *in arguendo*, Lindqvist *et al.* were combined with Usel the result would not be a deronator having the essential features as called for in claim 1 of the present application.

Therefore, all objections and rejections having been addressed, it is respectfully submitted that the present application is in a condition for allowance and a Notice to that effect is earnestly solicited.

Should any issues remain unresolved, the Examiner is encouraged to contact the undersigned attorney for Applicants at the telephone number indicated below in order to expeditiously resolve any remaining issues.

Respectfully submitted,

PILLSBURY WINTHROP LLP

By: 

Christopher M. Beck
Registration No. 52,603
Direct No. (703) 905-2013

1600 Tysons Boulevard
McLean, VA 22102
(703) 905-2000 Telephone
(703) 905-2500 Facsimile

Date: April 9, 2004